Amendments to the Claims:

Claims 1-27 (Canceled)

28. (Currently amended) A transgenic mouse whose genome comprises a null ~~disruption in an~~ endogenous PTP36 ~~gene~~allele, wherein said null allele comprises exogenous DNA~~where the disruption is homozygous and the transgenic mouse is female, the transgenic mouse lacks production of functional PTP36 protein, and exhibits at least one of the following phenotypes, relative to a wild-type mouse: a uterine abnormality, a hormonal imbalance, androgenization, increased body weight, increased organ weight, reduced or absent mammary tissue or increased anogenital distance~~.

29. (Currently amended) The transgenic mouse of claim ~~28~~53, wherein said mouse exhibits, relative to a wild-type control mouse, a~~the~~ uterine abnormality ~~comprises~~ comprising uterine dilation.

30. (Currently amended) The transgenic mouse of claim ~~28~~53, wherein said mouse exhibits, relative to a wild-type control mouse, a~~the~~ uterine abnormality ~~comprises~~ comprising~~presence of~~ keratin in the uterine horns.

31. (Currently amended) The transgenic mouse of claim ~~28~~53, wherein said mouse exhibits, relative to a wild-type control mouse, a~~the~~ uterine abnormality ~~comprises~~ comprising~~presence of~~ keratin in the uterine lumen.

32. (Currently amended) The transgenic mouse of claim ~~28~~53, wherein said mouse exhibits, relative to a wild-type control mouse, ~~the~~ increased organ weight ~~comprises~~ comprising at least one of the following: increased liver weight, increased spleen weight, increased thymus weight increased liver weight relative to body weight and increased spleen weight relative to body weight.

Claims 33-36 (Canceled)

37. (Currently amended) A cell or tissue ~~obtained~~ isolated from the transgenic mouse of claim 28.

Claims 38-46 (Canceled)

47. (Currently amended) A method of producing the~~a~~ transgenic mouse of claim 28 ~~comprising a disruption in an endogenous PTP36 gene~~, the method comprising:

    a. introducing a targeting construct capable of disrupting an endogenous PTP36 allele~~gene~~ into a mouse embryonic stem cell;

b. selecting for the mouse embryonic stem cell that has undergone homologous recombination;

c. introducing the mouse embryonic stem cell selected for in step (b) into a blastocyst;

d. implanting the resulting blastocyst into a pseudopregnant mouse, wherein the resultant mouse gives birth to a chimeric mouse; and

e. breeding the chimeric mouse to produce the transgenic mouse~~,~~

~~wherein where the disruption is homozygous and the transgenic mouse is female, the transgenic mouse lacks production of functional PTP36 protein and exhibits at least one of the following phenotypes, relative to a wild-type mouse: a uterine abnormality, a hormonal imbalance, androgenization, increased body weight, increased organ weight, reduced or absent mammary gland tissue or increased anogenital distance~~.

Claims 48-51 (Canceled)

52. (Currently amended) The~~A~~ transgenic mouse of claim 28~~whose genome comprises a disruption in a target gene comprising the sequence of SEQ ID NO:1~~, ~~said~~ wherein said exogenous DNA is located between ~~disruption comprising~~ nucleotides ~~192~~ 191 and 275 of SEQ ID NO:1~~through 274~~.

53. (New) The transgenic mouse of claim 28 wherein the mouse is heterozygous for said null allele.

54. (New) The transgenic mouse of claim 28 wherein the mouse is homozygous for said null allele.

55. (New) The transgenic mouse of claim 28 wherein said exogenous DNA comprises a gene encoding a selection marker.

56. (New) The transgenic mouse of claim 55 wherein said gene is a neomycin resistant gene.

57. (New) The transgenic mouse of claim 28 wherein said exogenous DNA comprises a gene encoding a visible marker.

58. (New) The transgenic mouse of claim 57 wherein said gene is a lacZ gene.